

25X1

Approved for Release 2002/07/03 : CIA-RDP82S00205R000100050003-6

SECRET

NO FOREIGN DISSEMINATION



AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM (U)

(THROUGH 17 MAY 1967)

MAY 1967

S-2275/AP-4

Prepared Jointly by
The Central Intelligence Agency
and
The Defense Intelligence Agency



CONTROLLED DISSEMINATION

EXCLUDED FROM AUTOMATIC
REGRADING, DOD DIR 5200.10
DOES NOT APPLY

SECRET

NO FOREIGN DISSEMINATION

DIA review(s) completed.

Approved for Release 2002/07/03 : CIA-RDP82S00205R000100050003-6
DIA HAS NO OBJECTION TO DECLASSIFICATION AND RELEASE

Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6

WARNING

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C. Sections 793 and 794. The transmission or revelation of its contents in any manner to an unauthorized person is prohibited by law.

Approved **SECRET** as **NO FOREIGN DISSEM** 00050003-6

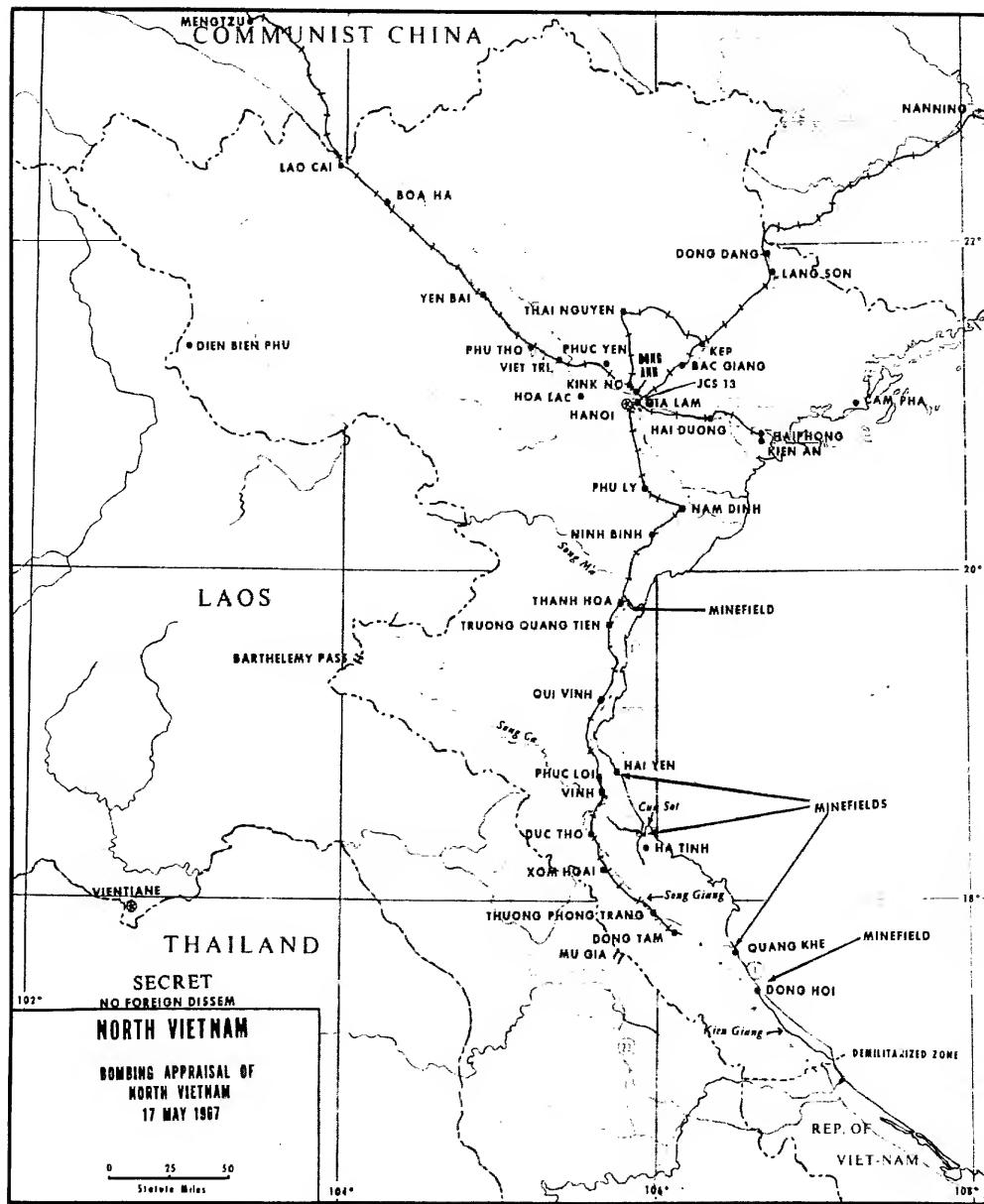
**AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM
(THROUGH 17 MAY 1967)**

FOREWORD

This report is prepared on a monthly basis at the request of the Secretary of Defense for an evaluation of certain effects of the ROLLING THUNDER program. The report covers three general areas of concern: Effects on Military Targets; Leadership and Public Reactions; and Effects on the NVN Economy. The discussion of political effects is limited to those developments within North Vietnam which relate to Hanoi's attitude toward continuing the war and the effects the ROLLING THUNDER attack has on civilian morale in North Vietnam.

Approved For Release 2002/07/03 : CIA-RDP82S0820F000100050003-6
SECRET - NO FOREIGN DISSEM

Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6



Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6

Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6

SECRET - NO FOREIGN DISSEM

AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM
THROUGH 17 MAY 1967

SUMMARY

1. (S/NFD) The air activity over North Vietnam continued at a high level during late April and early May. Although the preponderance of air strikes continued to be directed against lines of communications (LOC's), strikes against significant military and industrial targets increased. Three airfields which support jet aircraft, the Haiphong cement plant, four electric power plants, the Hanoi transformer station and major barracks, supply, repair and transportation targets within the Haiphong and Hanoi areas were struck.

2. (S/NFD) Air strikes against the rail system increased considerably from the previous reporting period and the capability of North Vietnam's rail system has deteriorated due to strikes against several significant rail targets. Numerous facilities on the key Hanoi-Dong Dang line were attacked, disrupting through rail service for more than half the reporting period. The most significant strikes were against the Hanoi Rail and Highway Bridge over the Canal des Rapides (JCS 13) which have closed the lines to through rail traffic since 29 April. Until a bypass can be completed for this bridge all rail traffic to Hanoi on the Lao Cai, Thai Nguyen, and Dong Dang lines will require shuttling. In addition, the Hanoi-Lao Cai line was closed for about four days by strikes north of Viet Tri. The

Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6

SECRET - NO FOREIGN DISSEM

SECRET - NO FOREIGN DISSEM

Hanoi-Haiphong line, although struck, was considered operational for the entire month. In the south, the Hanoi-Vinh line continued to be subjected to intensive air attacks, and the line was probably closed for through service throughout the month.

3. (S/NFD) The high level of air strikes against the highway system continued and damage inflicted on vehicles and highway facilities was the most for any month this year. The bulk of the interdiction effort was against the principal roads south of the 20th Parallel. Despite the increased level of damage in this area, heavy traffic was still evident. Large convoys of trucks were detected on Route 1A moving toward the DMZ.

4. (S/NFD) Waterborne transport activities continued at a high level. The number of watercraft sighted and the number destroyed were the highest for any monthly period since October 1966. The majority of the inland and coastal waterborne traffic during the period was reported below the 20th Parallel. As in the case of increased highway activity, the increase in waterborne activity is probably to support the recent North Vietnamese military operations and buildup in the DMZ area. There are indications that the mining of North Vietnamese waterways has interrupted the operation of larger cargo-vessels

SECRET - NO FOREIGN DISSEM

Approved For Release 2002/07/02 : CIA-RDP82S00205R000100050003-6

SECRET-NO FOREIGN DISSEM

but has not affected small craft activity. Recent photography of the Song Ca shows small craft sailing directly through mined areas.

5. (S/NFD) The strikes against airfields and other key targets in the heavily defended Hanoi and Haiphong areas, generated extensive air defense reactions and inflicted the most severe damage to date on the North Vietnamese air defense system. The MIG engagements were much greater than any previous monthly period and the total MIG losses were the highest on record. Despite the heavy losses, North Vietnam appears determined to continue an aggressive defense of its fighter airfields and the Hanoi/Haiphong area.

6. (S/NFD) A record total of 522 surface-to-air missiles (SAM's) were fired at US aircraft over North Vietnam during the period 15 April to 15 May and nine US aircraft were lost. The North Vietnamese continued to make determined efforts to position SAM's in the vicinity of the DMZ to bolster air defenses in this heavily attacked area. Since 2 March, four sites have been confirmed in the DMZ area. One of the occupied sites was destroyed, but operational SAM's are still in the area.

7. (S/NFD) The cumulative effects of the air strikes in North Vietnam have caused multiple management and logistic

SECRET-NO FOREIGN DISSEM

problems and have degraded North Vietnam's capability for sustained large scale conventional military operations against South Vietnam. The accelerated pace and expanded scope of the bombing campaign have sharply increased the cost and difficulties of the war for Hanoi. However, the North Vietnamese still retain the capability to support activities in South Vietnam and Laos at present or increased combat levels and force structures.

8. (S/NFD) The intensified bombing has increased the difficulties the regime is experiencing in supplying the North Vietnamese populace and apparently has resulted in renewed efforts to evacuate nonessential personnel from Hanoi and Haiphong. However, it does not appear likely that these latest difficulties will cause morale to decline to the extent that significant pressure would be placed on the Hanoi leadership to change its policy, and there is no evidence that these attacks have weakened the will of the Hanoi leadership to press on with the war.

9. (S/NFD) The extension of the Rolling Thunder program to include attacks against major industrial facilities has destroyed a large share of North Vietnam's modern industrial base. The indirect costs in terms of lost industrial production and the loss of foreign exchange

SECRET-NO FOREIGN DISSEM

Approved for Release 2010/3/20 AMENDS 00050003-6

SECRET NO FOREIGN DISSEM

from industrial exports will amount to tens of millions of dollars annually. However, modern industry makes only a small contribution to the war effort.

10. (S/NFD) Total power generating capacity currently out of operation in North Vietnam amounts to approximately 130,000 kilowatts (kw), about 70 per cent of the national capacity. As a result of the recent attacks on electric power facilities, the supply of power in Hanoi has been reduced to about one-half the city's normal needs. Haiphong must now depend on the small amount of power that can be supplied via the direct line from Hanoi and by diesel generators for high priority needs. Other industrial complexes such as Viet Tri and Thai Nguyen have been cut off from the central power supply and must rely on power from diesel generators alone. Some industrial processes have had to be fragmented to permit the use of diesel generators, while in other cases -- such as at the large chemical plants around Viet Tri and Bac Giang -- complete shutdowns undoubtedly have occurred. Imported diesel generating equipment is estimated to be capable of offsetting only 10 to 15 per cent of the capacity out of operation. However, port operations can be maintained by the use of diesel generators and ships' power.

11. (S/NFD) The most significant damage to manufacturing facilities during the period resulted from attacks against

Approved for Release 2010/3/20 AMENDS 00050003-6

SECRET NO FOREIGN DISSEM

SECRET-NO FOREIGN DISSEM

the Thai Nguyen Iron and Steel Combine and the Haiphong Cement Plant. Although aerial photography reveals no direct damage to the blast furnaces at Thai Nguyen, pig iron production may be affected by damage to associated facilities. In addition, many fabrication shops have been destroyed or damaged. The Haiphong Cement Plant is inoperative because of damage to the plant and the loss of electric power. The loss of cement production will deprive North Vietnam of one of its major foreign exchange earners and will require the North Vietnamese to import cement unless the plant is repaired quickly or large stockpiles are available.

12. (S/NFD) There was no significant damage to bulk petroleum storage facilities during April. Imports amounted to about 13,000 metric tons, a major decline from the monthly average of almost 27,000 metric tons observed in the first quarter of 1967. Stocks on hand as of the end of April are estimated to have amounted to between 54,000 and 69,000 metric tons, equivalent to between about 90 and 110 days of supply.

13. (S/NFD) Seaborne imports totaled 141,200 metric tons in April, only 900 metric tons below the record volume in March of this year. Imports of foodstuffs (37,000 metric tons) and miscellaneous and general cargoes (65,200 metric

SECRET-NO FOREIGN DISSEM

SECRET-NO FOREIGN DISSEM

tons) reached record monthly volumes. Despite the exceptionally large volumes of cargo delivered to Haiphong in both March and April, dry cargo ships were in port an average of 13 days, not significantly different than the average time in port in 1966.

14. (S/NFD) Losses in foreign exchange from decreased seaborne exports of coal, apatite, and cement reached the highest monthly total since June 1966. The high loss in April resulted primarily from a sharp decrease in coal exports, which were the lowest since the beginning of the bombing. There continued to be no seaborne exports of apatite during April.

15. (S/NFD) Cumulative measurable damage to North Vietnam's economy and military facilities as a result of air strikes through April 1967 is estimated at \$233 million.* In addition to the measurable losses, there continue to be many other losses to the economy and to the military establishment which cannot be assigned meaningful values.

* See footnote page 25.

SECRET-NO FOREIGN DISSEM

Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6

SECRET-NO FOREIGN DISSEM

Effects on Military Targets

1. (S/NFD) The air activity over North Vietnam continued at a high level during late April and early May, frequently exceeding 300 sorties a day. Although the preponderance of air strikes continued to be directed against lines of communications (LOC's), strikes against significant military and industrial targets increased. Damage inflicted on transport equipment and transportation systems increased during the reporting period. Three airfields which support jet aircraft, the Haiphong cement plant, four electric power plants, the Hanoi transformer station and major barracks, supply, repair and transportation targets within the Haiphong and Hanoi areas were struck. Destruction of North Vietnamese aircraft since 15 April reached a new high for any four week period.

2. (S/NFD) The intensified US air operations have occasioned a spate of reports that the Soviets will respond by providing increased aid and possibly improved weapons to North Vietnam. Communist delegations at the United Nations have been spreading the word that the USSR is contemplating providing North Vietnam an improved type of surface-to-air missile (SAM) and possibly a surface-to-surface missile of "POLARIS range." Weapons most likely to be provided North Vietnam would be to strengthen the air defense system, and coastal defenses and to improve military capabilities along the DMZ.

Approved For Release 2002/07/02 : CIA-RDP82S00205R000100050003-6

SECRET-NO FOREIGN DISSEM

SECRET-NO FOREIGN DISSEM

3. (S/NFD) Air strikes against the rail system increased considerably from the previous reporting period and the capability of North Vietnam's rail system has deteriorated due to strikes against several significant rail targets. The Hanoi Rail Car Repair Shop at Gia Lam was struck repeatedly and preliminary analysis indicates extensive damage to buildings. Damage to this facility probably will temporarily disrupt the repair of freight cars, although repair activity can probably be dispersed and conducted at local levels. The rail yard is still capable of supporting through rail service.

4. (S/NFD) Numerous facilities on the key Hanoi-Dong Dang line were attacked, disrupting through rail service for more than half the reporting period. The most significant strikes were against the Hanoi Rail and Highway Bridge over the Canal des Rapides (JCS 13) which dropped two spans on 29 April and closed the line to through rail traffic. Photography of 5 May indicates that the North Vietnamese are completing a rail bypass bridge that can be operational in about a month. Until the bypass bridge is completed all rail traffic to Hanoi on the Lao Cai, Thai Nguyen, and Dong Dang lines will require shuttling. The Bac Giang Rail and Highway Bridge (JCS 18.23) was struck on 30 April and one span dropped; however, photography on the following day

SECRET-NO FOREIGN DISSEM

SECRET-NO FOREIGN DISSEM

Showed that a new rail span had been emplaced and was probably operational. This represents the quickest confirmed restoration of a rail bridge to date.

5. (S/NFD) The Hanoi-Lao Cai line was closed for about four days by strikes north of Viet Tri. Shuttling by rail ferry continues to be necessary to bypass the previously destroyed Viet Tri Rail and Highway Bridge over the Riviere Claire (JCS 15). Operations on the Hanoi-Thai Nguyen-Kep line have been restricted by damage to the Thai Nguyen yard. The Hanoi-Haiphong line, although struck, was considered operational for the entire month. In the south, the Hanoi-Vinh line continued to be subjected to intensive air attacks, and the line was probably closed for through service throughout the month. Although limited operations were possible between major points of interdiction, only light-capacity rail cars can operate south of Qui Vinh. The 45-mile rail section between Xom Hoai and Dong Tam on the tramway south of Duc Tho is interdicted at Thuong Phong Trang.

6. (S/NFD) New construction continues to be evident on the rail system. There are indications of dual guage construction on the Hanoi-Thai Nguyen line north of Kinh No. Two bypass bridges were detected on the Kep-Thai Nguyen line and three new bypass bridges were discovered on the

SECRET-NO FOREIGN DISSEM

SECRET-NO FOREIGN DISSEM

Lao Cai line. On the Hanoi-Dong Dang line, a second bypass bridge for the Hanoi Railroad and Highway Bridge (JCS 13) is under construction which may be either a rail or highway bridge. The Phu Ly railroad bridge (JCS 21) on the Hanoi-Vinh line has its first bypass under construction.

7. (S/NFD) The high level of air strikes against the highway system continued and damage to vehicles and highway facilities was the most for any month this year. Following the pattern of past months, the bulk of the interdiction effort was against the principal roads south of the 20th Parallel. Despite the increased level of damage in this area, heavy traffic was still evident. Vehicle sightings reflected an apparent increase in the volume of both day and night motor movement with the bulk of the vehicle sightings south of Thanh Hoa. Large convoys of trucks -- one reported to number about 100 -- were detected on Route 1A moving toward the DMZ. Recent military activity and increased ammunition expenditures by the sizeable North Vietnamese forces located in the vicinity of the DMZ probably contributed to the higher level of vehicle activity.

8. (S/NFD) Major road cuts were inflicted on Route 15 north of Mu Gia Pass early in April, and on Routes 101 and 1A

SECRET-NO FOREIGN DISSEM

SECRET-NO FOREIGN DISSEM

further south. However, strikes against Route 15 decreased sharply during early May. Road repair crews took advantage of the lull to repair heavily damaged sections, and the first week of May saw a heavy nighttime movement of trucks into and out of Laos -- greater than that of the TET pause (in February 1967) when North Vietnam had unrestricted use of the road. Main routes were kept serviceable to through traffic for most of the period by a large North Vietnamese labor force augmented by recently imported road construction equipment. Five pieces of construction equipment were observed on Route 7 near Barthelemy Pass and a bulldozer and grader were at work on Route 102 near the DMZ. The major highway bridges recently damaged in the Hanoi area were quickly bypassed although highway capacity was reduced. The Hanoi Rail and Highway Bridge over the Canal des Rapides was bypassed by a pontoon highway bridge within two days of being struck, and a previously completed highway ferry site was placed in service following strikes against the Bac Giang Rail and Highway Bridge (JCS 18.23).

9. (S/NFD) Waterborne transport activities continued at a high level. The number of watercraft sighted and the number destroyed were the highest for any monthly period since October 1966.

SECRET-NO FOREIGN DISSEM

Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6
SECRET-NO FOREIGN DISSEM

The majority of the inland and coastal waterborne traffic during the period was reported below the 20th Parallel. Concentrations of craft were reported along the intra-coastal route and in the southern Panhandle areas. The high level of activity reflects the increased use of the waterways as supplements, alternates, and feeders to the land LOC's. The largest number of craft sighted since the TET standdown was reported in the Quang Khe and Dong Hoi areas. As in the case of increased highway activity, the increase in waterborne activity is probably to support the recent North Vietnamese military operations and build-up in the DMZ area.

10. (S/NFD) There are indications that the mining of North Vietnamese waterways has interrupted the operation of larger cargo-vessels but has not affected small craft activity. A captured North Vietnamese fisherman has reported that mines sank two large barges in the mouth of the Song Ca in early March; however, photography has been unable to provide any evidence of these sinkings. Traffic levels on both inland and coastal routes which feed through the mined estuaries show no drastic departures from premining levels. Watercraft observed in these areas are generally small wooden sail boats which

SECRET-NO FOREIGN DISSEM

probably do not produce the proper acoustic or magnetic stimuli to detonate the mines. In fact, recent photography of the Song Ca shows small craft sailing directly through mined areas.

11. (S/NFD) Strikes against coastal transshipment points and naval bases increased markedly over the previous period -- most were directed against facilities between the 17th and 19th Parallels. Transshipment points at Quang Khe and Dong Hoi were struck repeatedly. The piers at both locations have been severely damaged for several months and apparently have been abandoned as cargo-handling facilities but supply operations continue over the beach. Hai Yen and Phuc Loi naval bases were struck and the pier at Hai Yen damaged.

12. (S/NFD) Attacks against the North Vietnamese air defense system were enlarged to include airfields not previously bombed. The strikes against three airfields capable of supporting MIG operations, as well as other key targets in the heavily defended Hanoi and Haiphong areas, generated extensive reactions and inflicted the most severe damage to date on the North Vietnamese air defense system. Photography on 1 May of Kep airfield shows three MIG-17s burning on the ground and possibly five others damaged. Kien An airfield was hit on 10 May

SECRET-NO FOREIGN DISSEM

SECRET-NO FOREIGN DISSEM

but is still operational. Hoa Lac was last struck on 8 May with runway cratering reported that could have rendered the field nonoperational.

13. (S/NFD) Air engagements between US and North Vietnamese jets during the period 15 April to 15 May resulted in 21 MIGs destroyed and five probably/possibly destroyed with a loss of seven US aircraft plus two probable losses. The MIG engagements were much greater than any previous monthly period and the total MIG losses were the highest on record. Despite the heavy losses, North Vietnam appears determined to continue an aggressive defense of its fighter airfields and the Hanoi/Haiphong area.

14. (S/NFD) A record total of 522 surface-to-air missiles (SAM's) were fired at US aircraft over North Vietnam and nine US aircraft were lost to SAM's during the period 15 April to 15 May. The heaviest barrage was encountered during attacks in the Haiphong area on 20 April. Pilots reported that a number of missiles seemed to be unguided, others traveled straight up as if fired for shock value, and some were observed to detonate directly over the city or impact in the immediate area.

SECRET-NO FOREIGN DISSEM

SECRET-NO FOREIGN DISSEM

15. (S/NFD) The North Vietnamese continued to make determined efforts to position SAM's in the vicinity of the DMZ to bolster air defenses in this heavily attacked area. The first indications of SAM's in this area were noted in September 1966. Since 2 March, four sites have been confirmed by photography. One of the occupied sites (182P) was destroyed on 30 April by aerial bombing, naval bombardment, and 175 mm artillery fire. However, operational SAM's are still in the area -- as evidenced by the shoot-down of an A4E on 10 May, several sightings of SAM associated equipment, and the location of a portion of an SA-2 missile south of the DMZ. Indications are that the North Vietnamese will continue to deploy SA-2 missiles in the DMZ area.

16. (S/NFD) The cumulative effects of the air strikes in North Vietnam have caused multiple management and logistic problems and have degraded North Vietnam's capability for sustained large scale conventional military operations against South Vietnam. The accelerated pace and expanded scope of the bombing campaign have sharply increased the cost and difficulties of the war for Hanoi. However, the North Vietnamese still retain the capability to support activities in South Vietnam and Laos at present or increased combat levels and force structures.

SECRET-NO FOREIGN DISSEM

SECRET - NO FOREIGN DISSEM

Leadership and Public Reactions

17. (S/NFD) The intensified bombing in close proximity to the heart of North Vietnam's two major cities has increased the difficulties the regime is experiencing in supplying the North Vietnamese populace and apparently has resulted in renewed efforts to evacuate nonessential personnel from Hanoi and Haiphong. The additional evacuees will probably be forced to undergo some of the hardships and shortages which earlier evacuees experienced. For those remaining in the cities, shortages of electricity, and possibly some consumer goods are probably in store. However, in view of the stoic manner in which the Vietnamese people have borne the effect of the past two years of bombing, it does not appear likely that these latest difficulties will cause morale to decline to the extent that significant pressure would be placed on the Hanoi leadership to change its policy to continue the war.

18. (S/NFD) There is no evidence that these attacks have weakened the will of the Hanoi leadership to press on with the war. [redacted] early this month, the North Vietnamese Prime Minister discounted the effects of the bombings and pointed instead to the continuing series of Communist "victories" and to the general

25X1C

SECRET - NO FOREIGN DISSEM

25X1C

"improving military situation." [redacted]

25X1C

[redacted] North Vietnam

would not buckle under intensified US bombing but that the Americans would become discouraged by their failure to bring the North Vietnamese to terms and would change their policy.

Effects on the Economy

19. (S/NFD) The extension of the Rolling Thunder program to include attacks against major industrial facilities, including electric powerplants, has destroyed a large share of North Vietnam's modern industrial base. Many of the achievements of a decade of industrial growth have been lost and industrial development has been indefinitely postponed. Air strikes against electric power facilities have put out of operation about 70 per cent of North Vietnam's generating capacity. Electric power has become the most heavily damaged sector of the economy. Facilities at the Thai Nguyen Iron and Steel Combine and the Haiphong Cement Plant have also been damaged. The indirect costs in terms of lost industrial production and the loss of foreign exchange from industrial exports will amount to tens of millions of dollars annually. Nevertheless, modern industry makes only a small contribution to the war effort. The essentially agrarian

SECRET NO FOREIGN DISSEM

nature of the economy remains North Vietnam's best protection against the effects of air attacks. Local and handicraft industry provide a large degree of self-sufficiency, while the flow of military and essential economic supplies from other Communist countries provides North Vietnam with the necessary materials for continuing the war.

20. (S/NFD) Total power generating capacity currently out of operation in North Vietnam amounts to approximately 130,000 kilowatts (kw), about 70 per cent of the national capacity. Recent damage inflicted on the central power network alone has reduced capacity from a prestrike level of 136,000 kw to one serviceable plant in Hanoi with a capacity of 32,500 kw. Within the central network, the Haiphong Powerplant West, Haiphong Powerplant East, and Hanoi Transformer Station at Dong Anh were attacked for the first time during the latter part of April. All three of these installations are currently out of operation. Heavy damage to Haiphong West will prevent partial operation of the plant for at least two months. Destruction of the boilerhouse and generator hall at Haiphong East will render this plant unserviceable for about eighteen months. Damage to the Dong Anh substation probably will prevent its operation for a minimum of three months.

25X1C

SECRET NO FOREIGN DISSEM

SECRET-NO FOREIGN DISSEM

25X1C

[Redacted]

21. (S/NFD) As a result of the recent attacks on electric power facilities, the supply of power in Hanoi has been reduced to about one-half the city's normal needs. Haiphong must now depend on the small amount of power that can be supplied via the direct line from Hanoi and by diesel generators for high priority needs. Other industrial complexes such as Viet Tri and Thai Nguyen have been cut off from the central power supply and must rely on power from diesel generators alone.

22. (S/NFD) Drastic curtailment of electric power has undoubtedly caused some industrial processes to be fragmented to permit the use of small diesel generators. In other cases complete shutdowns undoubtedly have occurred, such as at the large chemical plants around Viet Tri and Bac Giang. Where manufacturing or repair processes can be divided into small components, such as in machine shops, truck and freight car repair facilities, or coal mining, some power can be supplied by small diesel generating units, but not without a loss in efficiency. Imported diesel generating equipment is estimated to be capable of offsetting only 10 to 15 per cent of the power capacity out of operation, and strict rationing and assignment

SECRET-NO FOREIGN DISSEM

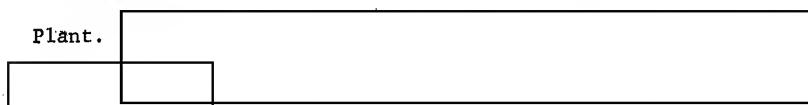
SECRET-NO FOREIGN DISSEM

of priorities will be necessary. For all practical purposes nonessential supply of power for residences, commercial establishments, and other public use has been eliminated. However, port operations probably will be maintained since power from visiting ships as well as from diesel generators can be used for this activity.

23. (S/NFD) The most significant damage to manufacturing facilities during the period resulted from attacks against the Thai Nguyen Iron and Steel Combine and the Haiphong Cement

Plant.

25X1C



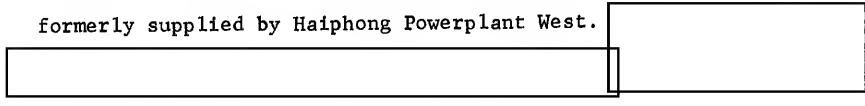
25X1C

pig iron production may be affected by damage to associated facilities such as the steam plant and the power network. Many fabrication shops have been destroyed or damaged, and the fabrication of barges, pontoons, and other steel products probably has been restricted. Some fabrication can be continued, however, since the industrial processes involved in fabricating most of the steel products observed at Thai Nguyen do not require a large source of power or elaborate support facilities.

24. (S/NFD) The Haiphong Cement Plant is inoperative

because of damage to the plant and the loss of electric power formerly supplied by Haiphong Powerplant West.

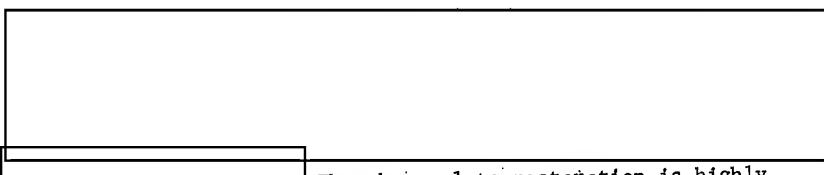
25X1C



25X1C

SECRET-NO FOREIGN DISSEM

25X1C



25X1C

Though complete restoration is highly unlikely until after the cessation of bombing, partial operation of the plant could probably be achieved in 90 days. The loss of cement production will deprive North Vietnam of one of its major foreign exchange earners and will require the North Vietnamese to import cement unless the plant is repaired quickly or large stockpiles are available.

25. (S/NFD) There was no significant damage to bulk petroleum storage facilities during April. Identified petroleum imports amounted to about 13,000 metric tons, a major decline from the monthly average of almost 27,000 metric tons observed in the first quarter of 1967. On the basis of petroleum shipments that have arrived or are en route as of 10 May 1967, imports in May will increase again and amount to at least 24,000 metric tons. The combined level of imports for April and May is consistent with the current estimated normal rate of consumption of about 18,400 metric tons per month. Stocks on hand as of the end of April are estimated to have amounted to between 54,000 and 69,000 metric tons, equivalent to between

SECRET-NO FOREIGN DISSEM

about 90 and 110 days of supply.*

26. (S/NFD) Recent information indicates that salt water fish, fish sauce, sugar, and meat are in short supply in some areas and the prices of many foods have risen. Thus, the North Vietnamese have had to tighten their belts another notch and tolerate a more monotonous fare. However, bulk food imports have been maintained at a high level and there are no indications that the food situation has become critical.

27. (S/NFD) Despite intensified air strikes against industry, the North Vietnamese continue to negotiate new aid contracts and cultural agreements with other Communist countries. At least 19 new aid contracts have been noted during the first four months of 1967. Eight of these contracts deal with pier construction and river and harbor dredging, while the remaining 11 are unidentified. During

* This range reflects the uncertain origin of 14,600 metric tons of petroleum shipped from Communist China during the first quarter of 1967. It cannot be determined whether this petroleum represents part of the 34,000 metric tons diverted to China in mid-1966 (previously considered to have been transshipped by rail to North Vietnam in 1966) or represents, in fact, petroleum of Chinese origin. The upper end of the range considers the shipments from China this year to represent petroleum of Chinese origin. The lower end of the range assumes that the shipments represent part of the petroleum diverted to China in 1966.

SECRET-NO FOREIGN DISSEM

the period 30 March-27 April, North Vietnam signed cultural agreements with the USSR, Communist China, and East Germany which provide for the training of additional North Vietnamese students.

25X1

25X1
[redacted] 2,100 Vietnamese students are currently studying in the USSR and 1,500 more will be sent in 1967. Communist countries reportedly will provide training for 20,000 to 30,000 students during the next few years to aid in general economic development.

28. (S/NFD) Seaborne imports totaled 141,200 metric tons in April, only 900 metric tons below the record volume in March of this year. Imports of foodstuffs (37,000 metric tons) and miscellaneous and general cargoes (65,200 metric tons) reached record monthly volumes. Despite the exceptionally large volumes of cargo delivered to Haiphong in both March and April, dry cargo ships were in port an average of 13 days, not significantly different than the average time in port in 1966.

29. (S/NFD) Losses in foreign exchange from decreased seaborne exports of coal, apatite, and cement reached the highest monthly total since June 1966. The high loss in April resulted primarily from a sharp decrease in coal exports, which were the lowest since the beginning of the

Approved for Release 02/01/2013 : 100050003-6

~~SECRET NO FOREIGN DISSEM~~

bombing. The drop in coal shipments from both Cam Pha and Hon Gai probably is due to the combined effects of a reduction in electric power (resulting from air strikes against the Hon Gai powerplant in March), damage inflicted on coal processing facilities at Cam Pha in February, and possible damage to coal processing facilities at Hon Gai during air strikes against the powerplant. There continued to be no seaborne exports of apatite during April. Although exports of cement dropped sharply from the above-normal level in March, it is probably premature to attribute the decrease to the recent air strikes against the cement plant and powerplants in Haiphong.

30.. (S/NFD) Cumulative measurable damage to North Vietnam's economy and military facilities as a result of air strikes through April 1967 is estimated at \$233 million*(see Tab B). Of the total, economic damage is valued at \$166 million. The increase in economic damage resulted primarily

* A re-evaluation of damage to SAM sites reveals that the estimate of damage inflicted during 1965-66, based primarily on pilot reports, was too high. The value of aircraft and naval craft destroyed has also been revised. Previous assessments of the value of these items were calculated on the basis of US production costs for comparable equipment. The assessment in this report is made on the basis of Soviet foreign trade prices (prices charged for similar equipment sold to less developed countries) as those most closely approximating the true value of this equipment. If estimates had been continued on the same basis as previously used, cumulative damage to military targets through April would have totaled \$95 million and increased the cumulative costs of measurable damage to North Vietnam's economy and military facilities to \$261 million.

Approved For Release 2002/07/02 : CIA-RDP82S0026F900100050003-6

SECRET-NO FOREIGN DISSEM

from air strikes against manufacturing facilities and electric powerplants. Most of the estimated damage to the military establishment consists of losses of fighter aircraft. In addition to the measurable losses, there continue to be many other losses to the economy and to the military establishment which cannot be assigned meaningful values.

Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6
SECRET-NO FOREIGN DISSEM

TABLE 360

RESULTS OF STRIKES ON NVN TARGETS a/ THRU 13 MAY 67

Fixed Targets	Total Targets <u>c/</u>			Targets Struck <u>d/</u>		e/ d/	No. of Attacks	Strike Sorties	% Of National Capacity Destroyed or inactive because of air strikes
	National Capacity (X 1000)	JCS <u>d/</u>	<u>Targeted</u>	No.	%				
Barracks	443 men	65	41.08	52	26.5	343	2799	24.93	
Ammo Depots	112.6 MT	18	100	18	100	63	1312	74	
POL Storage *	133.5 MT	13	100	13	100	84	694	86.6	
Supply Depots	10550 SqFt	29	42.48	21	44.4	63	706	17.05	
Power Plants	187 KW	20	94.5	14	76.1	61	492	70	
Maritime Ports	7.8 ST/Dy	8	95	6	44	27	235	12.1	
RR Yards	33.7 ST/Dy	4	78	3	54	59	368	21.5	
RR Shops		3	88	2	68	4	33	11.9	
<u>Industrial:</u>									
Explosive Plt	1 MT	1	100	1	100	3	28	71	
Iron & Steel	300MT(PIG)	1	100	1	100	20	237	100	
Cement Plant	600 MT	1	100	1	100	1	57	34	
Airfields	23	11		6	36	16	444	23	
Naval Bases	15	5		3	42	24	230	19.5	
Bridges	1,529	61		52		361	3040	46.3(of those tgtd)	
Commo Install	45	5		2		2	15	20	
Radar Sites	160	5		5		73	430	25.0	
SAM Sites	134			58		112	388		
Locks & Dams	43	8		2	10.6	2	10	5.3	
Ferries	34			11		7	44		

* JCS targets only; does not include dispersed storage.

Total Sorties: 11,800	Results <u>f/</u>
Armed Recce Sorties	Destroyed
121,149	Damaged
Vessels 5,983	11,181
Vehicles 3,208	3,395
RR Stock 941	1,915

a/ Assessments are based on best information received, will be refined as more accurate information becomes available.

b/ Strike plus flak suppression sorties. Some applied to multiple targets; in this summary assigned to principal target.

c/ These columns are not additive, since the number of installations, both targeted and struck in some cases, apply to more than one category of targets (i.e., barracks, supply and ammo depots).

d/ Percentages of national capacity where appropriate.

e/ Also numerous attacks during armed recce and other missions.

f/ Also numerous installations, AA sites, bridges, etc., attacked and road and rail cuts made.

Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6 TAB A
SECRET-NO FOREIGN DISSEM

SECRET - NO FOREIGN DISSEM

Value of Economic and Military Damage
Attributed to the ROLLING THUNDER Program
1965 Through April 1967

<u>Economic</u>		<u>Military</u>	
<u>Direct Losses</u>	<u>Million US\$</u>	<u>Direct Losses</u>	<u>Million US\$</u>
Railroad/Highway Bridges	24.8 ^{a/} ^{b/}	Barracks	19.9 ^{a/}
Transportation Equipment	41.4	Ammunition Depots	4.9 ^{a/}
Electric Power Plants	20.5	Supply Depots	5.0
Petroleum	7.4	Airfields	0.4
Manufacturing Facilities	11.7	Radar and Communications	
Railroad Yards	3.5 ^{a/}	Sites	2.8
Maritime Ports	1.4 ^{a/}	SAM Sites	3.4 ^{a/} ^{c/}
Miscellaneous Armed Reconnaissance	1.4	Naval Bases	1.6 ^{a/}
SUBTOTAL, Direct Losses	112.2	Aircraft	19.4 ^{d/}
<u>Indirect Losses</u>		Naval Craft	3.8 ^{d/}
Exports	20.2	Miscellaneous Armed Reconnaissance	6.4
Agriculture ^{e/}	25.5	TOTAL, Direct Losses	67.6
Fishing	7.8		
SUBTOTAL, Indirect Losses	53.5		
TOTAL, Direct and Indirect	165.8	<u>TOTAL</u> <u>Million US\$</u>	
		Economic 166 ^{f/}	
		Military 68 ^{f/}	
		TOTAL 233 ^{g/}	

- a/ Estimate is incomplete because of inadequate post-strike photography.
- b/ Of the total, \$4.1 million is estimated to have been expended to date on the repair of damaged and destroyed bridges and \$20.7 million is estimated for complete restoration in the future of bridges damaged or destroyed. In addition, \$1.2 million would be required to make temporary repairs to presently unrepairs bridges.
- c/ Recent extensive analysis reveals that previous estimates of damage inflicted during 1965-66 were too high.
- d/ Previous assessments of the value of aircraft and naval craft destroyed by air attacks were calculated on the basis of US production costs for comparable equipment. The assessment in this report is made on the basis of Soviet foreign trade prices (prices charged for similar equipment sold to less developed countries) as those most closely approximating the true value of this equipment.
- e/ It should be noted that losses of agricultural crops are arbitrarily attributed entirely to the indirect effects of the bombing. An unknown part of these losses is in fact due to weather and other natural causes.
- f/ If estimates had been continued on the same basis as previously used, see footnotes c and c, cumulative damage through April would have totaled \$95 million.
- g/ Excluding the cost of trucks destroyed and damaged in Laos and economic and military facilities and equipment destroyed and damaged by US naval operations along the coast of southern North Vietnam.

SECRET - NO FOREIGN DISSEM

Approved For Release 2002/07/03 : CIA-RDP82S0026R00100050003-6
SECRET - NO FOREIGN DISSEM

DISTRIBUTION LIST FOR DIA-CIA INTELLIGENCE REPORT
AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM

THE WHITE HOUSE:

Vice President	1 Cy
Gen Maxwell Taylor	1 Cy
Mr. Bromley Smith	5 Cys

DEFENSE:

SECDEF	2 Cys
ASST SECDEF (ISA)	2 Cys
ASST SECDEF (Systems Analysis)	2 Cys
ASST SECDEF (PA)	1 Cy

BUREAU OF THE BUDGET

1 Cy

TREASURY (Secretary)

1 Cy

USIA

1 Cy

AID

1 Cy

NASA

1 Cy

NSA

5 Cys

STATE

18 Cys

AEC

1 Cy

FBI

1 Cy

NIC

1 Cy

ACDA

1 Cy

CHAIRMAN, JCS

1 Cy

DIRECTOR, JOINT STAFF

1 Cy

J-1

1 Cy

J-3

2 Cys

J-4

1 Cy

J-5

1 Cy

J-6

1 Cy

SACSA

1 Cy

NMCC

3 Cys

ARMY:

CHIEF OF STAFF	2 Cys
DCSOPS	1 Cy
ACSFOR	1 Cy
ACSI	1 Cy
ACSI-CI	1 Cy
ACSI-Eastern	1 Cy
STAG	1 Cy

Approved For Release 2002/07/03 : CIA-RDP82S0026R00100050003-6
SECRET - NO FOREIGN DISSEM

NAVY:

CHIEF OF NAVAL OPERATIONS	2 Cys
DNI	1 Cy
OP-921E	1 Cy
OP-922Y1	1 Cy
OP-922Y2	1 Cy
OP-92B1	1 Cy

AIR FORCE:

CHIEF OF STAFF	2 Cys
ACS, I/USAF	1 Cy
AFNINDE	6 Cys
AFNIEBB	1 Cy
AFISI (Spec Investigation)	1 Cy
AUL (Air Univ Library)	1 Cy

MARINE CORPS:

COMMANDANT	1 Cy
G-2	1 Cy

CINCPAC	2 Cys
CINCPACAF	1 Cy
CINCUSARPAC	1 Cy
CINCPACFLT	1 Cy
COMUSMACV	2 Cys
7AF	2 Cys
COMSEVENTHFLT	1 Cy
COMATKCARSTRIKEFORSEVENTHFLT (CTF 77)	1 Cy
CINCLANT	1 Cy
CINCSSTRIKE	1 Cy
CINCSAC	1 Cy
SAC 544	1 Cy
CINCPAC	1 Cy
AFSTRIKE	1 Cy
COMTIC	1 Cy
CINCALCOM	1 Cy
CINCEUR	1 Cy
CINCUSAREUR	1 Cy
CINCUSAFE	1 Cy
CINCNAVEUR	1 Cy
CINCCONAD	1 Cy
CIA	125 Cys

Approved For Release 2002/07/02 : CIA-RDP82S00205R000100050003-6
SECRET-NO FOREIGN DISSEM

DIA:

DIADR	1 Cy
DIADD	1 Cy
DIASC-1	1 Cy
JS	1 Cy
CO-2C	1 Cy
AP	1 Cy
AP-2	1 Cy
AP-2C2	2 Cys
AP-2D1	1 Cy
AP-2D2	1 Cy
AP-3	1 Cy
AP-4	1 Cy
AP-4A	1 Cy
AP-4A2 (Pent)	6 Cys
AP-4A2 (AHS)	4 Cys
AP-4B4	2 Cys
AP-4C	3 Cys
AP-7	2 Cys
AP-8	2 Cys
XX	1 Cy
JT	1 Cy

Approved For Release 2002/07/02 : CIA-RDP82S00205R000100050003-6
SECRET-NO FOREIGN DISSEM

~~SECRET~~—NO FOREIGN DISSEM

Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6

Approved For Release 2002/07/03 : CIA-RDP82S00205R000100050003-6

~~SECRET~~—NO FOREIGN DISSEM